UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 21, 1999

Department of Energy
EM-70, ATTN: Mr. Michael E. Wangler
19901 Germantown Road
Germantown, MD 20874

SUBJECT: "PUNCTURE TESTING OF SHIPPING PACKAGES UNDER 10 CFR PART 71"

Dear Mr. Wangler:

In 1997, the NRC became aware that two holders of NRC Certificates of Compliance for transportation packages had performed the puncture test using a bar that was not properly mounted as specified in 10 CFR 71.73(c)(3). Based on these findings, Bulletin 97-02 was issued on September 23, 1997, to notify holders of Certificates of Compliance about issues related to conducting the puncture test specified in 10 CFR 71.73 (c)(3).

The Bulletin requested holders of NRC Certificates of Compliance to review the puncture test assessment for each of their certified package designs. If the puncture test assessment was based upon physical testing, the certificate holder was requested to determine whether the puncture test had been performed in accordance with 10 CFR 71.73(c)(3).

The responses to the Bulletin identified some packages that had not been puncture tested exactly as specified in the regulations. In some instances, the puncture pin had not been secured against lateral movement. In another instance, the pin had been made of concrete instead of steel. For some older package designs, there was insufficient documentation to allow the certificate holder to determine the exact details of how the test was performed.

In their replies to the Bulletin, the certificate holders submitted justifications for continued use of packages that had not been puncture tested exactly as specified in the regulations. Because of the problems identified in the Bulletin, some certificate holders retested their packages to demonstrate adequacy. Some certificate holders determined that the pin did not move during the test, and that securing the pin against lateral movement would not have affected the test results. Some certificate holders determined that even though the tests had been conducted with a concrete pin, the results would not have been significantly different with a steel pin. This is because the packages involved were substantially less rigid than the concrete pin, and thus the test package absorbed essentially all the kinetic energy. Finally, some packages had not been subjected to the puncture test because the outer packaging of the designs is sacrificial in nature. Puncture test damage to the sacrificial outer packaging would not significantly affect the ability of the package to meet the performance requirements of 10 CFR Part 71.

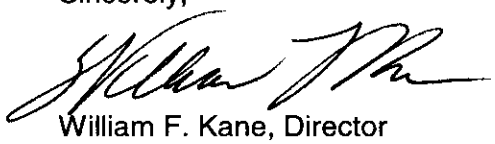
Based on the justifications for continued use provided by the certificate holders, as well as the excellent transportation safety record developed over several years, the staff believes that no further action is needed with respect to previously approved packages.

Certificate holders are reminded that previously approved packages that have not been shown to meet the current version of 10 CFR Part 71, and are therefore not designated as "-85", are authorized for continued use indefinitely. However, 10 CFR 71.13 includes certain restrictions on packages which have not been designated as "-85", namely, new packages may not be fabricated after April 1, 1999, and only certain types of amendments may be made to the Certificate of Compliance.

To receive a "-85" designation, a Certificate holder should submit an application that demonstrates that the package design meets the requirements of 10 CFR Part 71. The staff's review of applications for a "-85" designation will include an evaluation of how the puncture testing was performed. Only packages which have been properly tested or evaluated for the puncture test condition will be designated as "-85".

If you have any questions, please contact Mr. David Tiktinsky at (301)-415-8523.

Sincerely,



William F. Kane, Director
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards